

REMARKS/ARGUMENTS

Claims 12-22 are pending in this application. Claim 23 has been added to further describe the mixing ratio referred to in claim 19. Support for claim 23 can be found throughout the specification, e.g., at page 7, lines 18-21, as originally filed. No new matter has been added. Reconsideration of the application is requested in view of the following remarks.

Claim Rejections under 35 U.S.C. § 102(b) and/or 35 U.S.C. § 103(a)

The rejection of claims 12, 14-18 and 22 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Locke et al. (US Patent No. 3,737,399) are respectfully traversed. The rejection of claims 19-20 as obvious over Locke et al.; and claim 13 as obvious over Locke et al. are also traversed.

Regarding anticipation, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” MPEP § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the . . . claim.” *Id.* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)).

Regarding obviousness, as the Board of Patent Appeal and Interferences has recently confirmed, the analysis requires that the Office make “a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art.” *See In re Ward and Murphy*, Appeal No. 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original); *see also Ex parte Martin Haubner and Rolf Pinkos*, Appeal No. 2009-0449 (reversing an obviousness rejection and explaining that “in rejecting *process* claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a case of *prima facie* obviousness”). Moreover, the Supreme Court has indicated, *inter alia*, that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” and a “reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1731, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir.

2006); *see also Takeda Chem. Indus., v. Alphapharm Pty. Ltd.*, 492 F.3d 1350, 1356-57 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1731).

In the present case, Applicants point out that when the components and features of the present claims are compared to the disclosures of the references of record, it is evident that the claimed process and composition differs from Locke et al. and there is no apparent reason that would have prompted a person of ordinary skill to combine the elements or modify the reference in the manner presently claimed.

In particular, as acknowledged and appreciated by the Office, there is no description in Locke et al. of a number average pore diameter of not more than 1 m by gel formation. The reference only mentions that the process results in a solid foamed polymer from a hydrogen-peroxide-modified polymer dispersion. Also, the process steps are completely different, such that the reference only describes: (1) foaming the dispersion, and (2) drying the formed dispersion during or after cross-linking, in which (3) hydrazine is added to the dispersion during the foaming step. These distinctions are discussed in further detail below.

Regarding Locke et al., the reference generally describes a process for preparation of foamed polymers from hydrogen-peroxide-modified polymer dispersion. The process comprises the steps of foaming, cross-linking of the particles and drying. The dispersion preferably is a modified latex dispersion which is subsequently foamed to yield a so-called rubber foam.

A main difference between the reference and the claimed invention is that Locke et al. first foams and subsequently cross-links or gels (and therefore stabilizes) the foamed latex dispersion, which, for instance, becomes very clear when analyzing the examples.

In the present invention, there is no foaming at all - the porous material which is called foam is obtained from a gel as explained below after removal of the liquid phase ("drying") creating the porous structure in the polymeric three-dimensional system. The polymeric three-dimensional system in our case is based on the cross-linked polycondensation resin.

In particular, regarding Locke et al., the steps of foaming, gelling, or setting and cross linking of the foamed latex dispersion are known in the art. Corresponding agents are known, too (*see* column 3, lines 29-30). Where the modified polymer latex dispersions contain reactive groups such as carboxyl or hydroxyl groups, setting (not gelling) may be achieved by means of, for instance, melamine formaldehyde resins (MF resin), *see* column 3, lines 43-50.

In such cases neither gelling agents nor cross-linking agents (which act through double-bonds) are required. In other words, the MF resin is disclosed as a setting agent, not specifically as a gelling agent. It is only the gelling agents that are present in the so-called conventional amounts according to column 4, lines 42-44. The term “setting” is a much more general term reflecting the ongoing cross-linking of substances/mixtures leading to “hardened” solid state matter.

The term “gel” as used in the present invention specifically refers to a three-dimensional polymeric network within a liquid (spanning the volume of the liquid phase), see for instance <http://en.wikipedia.org/wiki/Gel>.

In the present invention, and as reflected by the claims, the gel as defined above is formed by a three-dimensional network resulting from the gelable mixture containing the polycondensation resin. Nothing even similar to that is disclosed in Locke et al.

According to Locke et al., setting of the foamed latex dispersion occurs with an undisclosed amount of MF resin via reactive groups contained on the surface of modified particles leading to cross linked particles.

The inventive process, in addition, comprises the following distinguishable features:

- The polymer foams according to the invention have a number average pore diameter of not more than 1 micrometer, whereas Locke et al. does not disclose any information concerning pore size.
- The polymer foams according to the invention are based on reactive polycondensation resins, whereas such resins according to Locke et al. are merely used as a setting agent for specific dispersion particles.
- According to step 1) a gelable mixture of the reactive polycondensation resin in a solvent or dispersion medium is prepared whereas the MF resins as such according to Locke et al. are never gelled, nor is the MF resin as such according to Locke et al. gelable. The gelation according to Locke et al. occurs through cross-linking of a foamed latex dispersion not through a sol-gel process based on a polycondensation resin.
- According to the present invention, drying is performed under subcritical conditions without previous exchange of the solvent whereas no drying conditions are disclosed in Locke et al. By contrast, Locke et al. mentions the cross-linking in hot air or steam (see

examples) whilst drying the foam. However, admittedly, nothing in Locke indicates drying under the conditions of the present invention.

As such, for at least these reasons, the claimed invention is not obvious over the references alone or in combination. Therefore, Applicants respectfully request reconsideration and withdrawal of these rejections.

In view of the above remarks and amendment, Applicants believe the pending application is in condition for allowance.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00348-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

Electronic signature: /Bryant L. Young/
Bryant L. Young
Registration No.: 49,073
CONNOLLY BOVE LODGE & HUTZ LLP
1875 Eye Street, NW
Suite 1100
Washington, DC 20006
(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Applicant